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Backgrounder

STAR WARS: THE STRATEGIC DEFENSE INITIATIVE

James Lee
Political and Social Affairs Division

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STAR WARS: THE STRATEGIC DEFENSE INITIATIVE

INTRODUCTION

Since both superpowers acquired Intercontinental Ballistic Missiles (ICBMs) of extreme accuracy and destructive power in the 1960s, international security has been based on the deterrence of aggression through the possibility of mutually assured destruction. With each side able to mount "strategic" attacks on the central national assets of its opponent (its population, industries and resources rather than just its armed forces), an uneasy but stable standoff existed.

In an address to the nation in March 1983, former U.S. President Ronald Reagan announced the Strategic Defense Initiative (SDI) research program to develop a defence against nuclear missiles. In the next six years, SDI, or "Star Wars" as it became popularly known, became the most massive peacetime defence research project in U.S. history, at a cost of some $17 billion.(1) Following the 1983 announcement, advocates and critics of the program proceeded to replay (with minor variations) a debate that had been held 20 years previously over the pros and cons of Anti-Ballistic Missile (ABM) systems. Although the technological justification and political support for SDI has diminished over the years, especially since the departure of Ronald Reagan, the program still absorbs large amounts of American defence research funds and continues to have important implications for arms control and other issues.

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(1) All dollar amounts given in this paper are in U.S. dollars.

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THE ABM DEBATE

In the 1950s both the United States and the USSR began developing air defence systems, such as the U.S. Nike-Zeus and the Nike-X, composed of radar networks and surface-to-air missiles (SAMs) in order to track and intercept enemy bombers capable of delivering nuclear weapons. With the advent of ICBMs, which could deliver nuclear warheads much more quickly and economically, these systems became inadequate for national defence. It was soon apparent that in the offence-versus-defence calculation as regards ICMBs, the offence was clearly favoured: only a near-perfect defence was worth building, since even a "few" nuclear weapons getting through would cause unacceptable damage; and it was much cheaper and easier to construct more missiles or even decoys than it was to develop and deploy an effective ABM system.

While these facts were apparent to the Soviet Union as well, a preoccupation with air defence led to the deployment of a rudimentary ABM system around Moscow. This Soviet ABM deployment gave ammunition to those in the U.S. who favoured similar systems. Critics argued that ABM systems couldn't perform well enough to justify their cost, and that they increased the risk of nuclear war by threatening the security of the opposition's nuclear deterrent. In fact, the argument went, since ABM systems could not give the U.S. a perfect defence against a coordinated "first strike" missile attack, their only real value was as protection against retaliation by whatever few enemy missiles managed to survive a first strike by the U.S. itself - i.e., to prevent a "second strike." Last but not least, by perpetuating an offense/defence race ABMs threatened future arms control agreements.

In 1967, after failing to convince Soviet Premier Alexei Kosygin of the benefits of ABM limitations, the Johnson administration announced its decision to deploy the Sentinel ABM system, although in recognition of the problems with ABM capability it justified this deployment as a hedge against accidental Soviet launches or a future Chinese missile threat. By 1969 the Soviets had begun to reconsider their objections to ABM limits, and the new Nixon administration had announced

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that instead of the Sentinel it would deploy the Safeguard system, which was designed for the easier job of protecting U.S. military facilities rather than population centres. (There were many fewer military facilities than cities and towns).

Over the next several years, the ABM debate raged in the United States as work proceeded on the Safeguard system. The Nixon administration had begun discussion of Strategic Arms reductions with the Soviet Union in 1969, and had rapidly realized that ABM limits were both necessary and desirable in order to achieve nuclear arms limits or reductions. In May 1972, the Superpowers signed the Anti-Ballistic Missile (ABM) Treaty as part of the SALT I accords. Under the treaty, which was of unlimited duration, each side was restricted to the deployment of two token ABM systems with 100 missiles apiece; in 1974 this was amended to allow only one site with 100 missiles. Apart from these systems, the treaty prohibited the testing or deployment of sea-based, air-based, space-based or mobile land-based ballistic missile defence systems or components (see Appendices). The Soviet Union chose to retain its ABM system around Moscow, while the U.S. chose to deploy its ABM system to protect an ICBM base near Grand Forks, North Dakota. The Grand Forks system was de-activated in 1976 after only ten months of operation because it was considered too expensive and ineffective. The Soviet ABM system incorporates the same level of technology as the Grand Forks site, and has never employed its full permitted quota of 100 missiles.(2)

THE STRATEGIC DEFENSE INITIATIVE

Ronald Reagan had campaigned in 1980 on the need to address the "window of vulnerability" through which the Soviet Union could supposedly threaten a successful nuclear attack on the United States.

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(2) See Eric Stubbs, "Soviet Strategic Defence Technology," in Bulletin of the Atomic Scientists, April 1987. Also the Council on Economic Priorities, "Soviet Strategic Defense Programs: A Decade Behind the United States," in Star Wars: The Economic Fallout, Ballinger Publishing Co., Cambridge, Mass., 1988.

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After being lobbied by right wing defence groups, the President had four meetings with Edward Teller, the so-called "father of the H bomb" and a strong ABM supporter. Subsequently, Reagan's televised speech of 23 March 1983 was drafted by Robert McFarlane, who later became his National Security Advisor. In this speech, Reagan rejected the assumptions of the ABM Treaty, calling upon the American scientific community

> ...those who gave us nuclear weapons, to turn their great talents now to the cause of mankind and world peace, to give us the means of rendering these nuclear weapons impotent and obsolete.

In attempting "to break out of a future that relies solely on offensive retaliation for our security," Reagan argued, "isn't it worth every investment to free the world from the threat of nuclear war?"(3)

The system envisioned by President Reagan consisted of a non-nuclear astrodome which would intercept and destroy ballistic missiles in flight. Given the complexities involved in this task, the SDI system would not be restricted to current ballistic missile technologies, which attack missiles as they near their targets; it would also exploit such exotic technologies as directed energy weapons, rail guns and space-based sensors and weapons to form a multi-layered system which would track and attack the missiles at all phases of their flight, thereby increasing the odds of successfully destroying them. (See Figure 1, which also explains many technical terms to be used in the pages following.)

As originally conceived, the system envisaged by SDI would have had to be capable of certain key functions, according to Dr. Richard DeLauer, U.S. Under-Secretary of Defence for Research and Engineering:(4)

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(3) Quoted in Sidney D. Drell, Philip J. Farley and David Holloway, The Reagan Defense Initiative: A Technical, Political and Arms Control Assessment, Special Report, Center for International Security and Arms Control, Stanford University, California, July 1984, p. 103.

(4) Richard D. DeLauer, "Antiballistic Missile Defense -- The Opportunity and the Challenge," NATO's Sixteen Nations, Vol. 29, No. 6, November 1984, p. 22-26.

FIGURE 1

Phases of a Missile's Flight

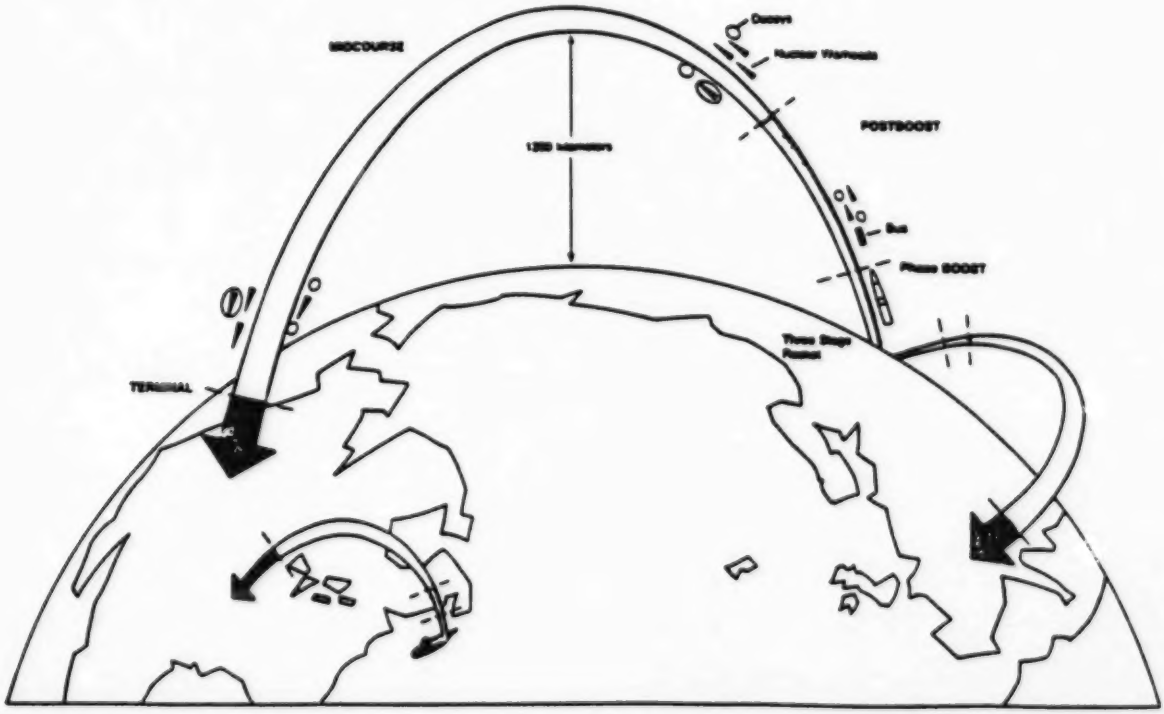
The Strategic Defense Initiative is intended to develop a multi-layered defense to attack missiles throughout their flight. The flight of a ballistic missile can be divided into four phases, each of which presents different problems and opportunities to possible defenses.

Flight begins with the "boost phase," the few minutes between ignition and burnout of the missile's rocket. Missiles in the boost phase are high-value targets because they have not yet released their complement of warheads. A successful attack on a missile in boost phase may destroy as many as a dozen or more nuclear warheads at once as well as possible warhead-mimicking decoys. But attacks on missiles in the boost phase generally require space-based weapons which are likely to be costly and vulnerable. Although the missile's rocket flare is easily detectable during the boost phase, the time for boost-phase attack is short: the rockets of current long-range missiles burn for three to five minutes, and future "fast-burn boosters" may complete their boost phase in a minute or less, making boost-phase attack extremely difficult.

The "post-boost phase" is the period during which the missile's "bus" maneuvers to place its warheads and decoys on the proper trajectories to their targets: the advantages and disadvantages of attacking a missile in the post-boost phase are similar to those of the boost phase, though the engines of the missile bus are smaller and more difficult to detect than the missile's main rockets.

The "midcourse phase" is the relatively long central portion of the flight in which the warheads coast through space, possibly accompanied by hundreds of thousands of decoys and other "penetration aids." For an ICBM, the midcourse phase lasts some 20 to 25 minutes, giving the defense more time to attack. However, discriminating the warheads from the thousands of cheap decoys would be very difficult.

The "terminal" or "reentry phase" is the few tens of seconds of a missile's flight when the warheads reenter the atmosphere (hence the term "reentry vehicle") and eventually detonate over or on their targets. Defense in this phase is technologically less demanding than in the other phases, but timelines are extremely short, and very large numbers of interceptors would be required for a nationwide defense, since each target area would have to be defended separately.



Source: Arms Control and National Security: An Introduction.

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- **Prompt and Reliable Attack Warning and Defence Initiation**

  Global, full-time surveillance would be required to detect the attack, to define its destination and intensity, and to provide data for boost-phase intercept and post-boost tracking.

- **Continuous Tracking of All Threatening Objects Throughout Their Trajectories**

  The tracking system would have to assemble the required information with accurate and timely data transfer to intercept systems for attack assignment.

- **Efficient Intercept and Destruction**

  The defence must be capable of dealing with any attack up to a massive, simultaneous launch.

- **Terminal Intercept**

  The defence must be capable of the relatively short-range engagement of reentering warheads.

- **Battle Management, Communications and Data Processing**

  The defence must have the required connecting elements for its various system components to achieve effectiveness and economy of force.

According to De Lauer, the task of combining these technologies into a meaningful system would demand breakthroughs in eight key areas, each "equivalent to, or greater than, the Manhattan project," which had produced the first atomic bomb.(5) In turn, the U.S. Department of Defense established five technical areas of SDI in which it would concentrate its activities.(6)

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(5) Quoted in Fen Hampson, "The Strategic Defense Initiative," in Unguided Missiles, W.W. Norton and Co., New York, 1989, p. 238.

(6) DeLauer (1984).

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- **Surveillance, Acquisition and Tracking**

  The technology must be able to detect, track and discriminate objects in all phases of the ballistic trajectory, while continuing to operate reliably under direct enemy attack and in an environment experiencing the effects of nuclear weapons. All the defensive systems envisaged relied on space-based sensors for early warning; for command, control and communications; and for overall battle management. (The combination of technology and tactics needed to ensure the survival of the space-based components of a defensive system under attack had yet to be developed.)

- **Directed Energy Weapons**

  The goal of directed energy weapons is to deposit, within a brief time, enough energy in the target to destroy it. This line of research was to consider four basic weapons concepts: space-based lasers, ground-based lasers, space-based particle beams and nuclear-driven directed energy weapons.

- **Kinetic Energy Weapons**

  The goal of kinetic energy weapons is to hit attacking missiles with an inert object moving so rapidly that the energy of the collision achieves destruction. Research here would concentrate on interceptor missiles and hyper-velocity gun systems (such as the magnetic rail gun, parked in space, which would employ a magnetic field to accelerate a piece of metal along a rail and fire it at great velocity).

- **Battle Management**

  Technologies would be developed for implementing "a highly responsive, ultra reliable, survivable, endurable and cost effective BM/C^3 [battle management/command, control, and communications] and supporting technologies."

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- **Support Programs**

A number of SDI support-related questions required answers and some of the individual programs studying those questions were:

-- lethality and target hardening,
-- system survivability,
-- space prime power and power conversion, and
-- space logistics.

ARMS CONTROL

Critics of the Strategic Defense Initiative immediately denounced the program as a threat to the ABM treaty which provided the basis for nuclear arms control, since it proposed the eventual deployment of space-based ABM components based on new technologies. In October 1985, the administration announced that a close reading of the ABM Treaty (the "legally correct" or "broad" interpretation) did not prohibit the testing or deployment of space-based new technologies, but limited only those technologies available at the time the treaty was signed. Critics, including almost all of the negotiators of the SALT I and ABM treaties, disagreed with this position, favouring the traditional or "narrow" interpretation. As Former President Richard Nixon said,

> As far as what was presented to the Senate was concerned, it was what we call the narrow interpretation. There is no question about that.(7)

The Soviet Union adamantly opposed SDI, arguing that it was aimed at producing space-strike weapons rather than a defence. While it continued to work on basic research related to Ballistic Missile Defence (BMD) systems, it argued that this research was permitted under the treaty and not aimed at the deployment of another ABM system.

In the US Congress, the administration's reinterpretation of the ABM treaty provoked increasing opposition to SDI. Apart from the

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(7) Quoted in "Strategic Defensive Arms Control: The ABM Treaty and Star Wars," in the excellent Arms Control and National Security, The Arms Control Association, Washington, 1989, p. 73.

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strong Congressional arms control lobby which valued the ABM treaty for its own sake, many in Congress felt that if an administration could reinterpret treaties on a whim, the role of Congress in the treaty-making process would become marginal.

The reinterpretation of the ABM treaty also caused unease among America's allies. Although Britain and West Germany accepted the U.S. invitation to participate in SDI research in 1985 (and Israel accepted in 1986), a growing chorus of allies argued for a return to the traditional interpretation of the ABM treaty. Although Canada agreed to allow private Canadian companies to participate in the SDI program, it declined to participate on a government-to-government basis because of its concerns about the ABM treaty.(8)

Although the administration agreed, under strong Congressional pressure, to proceed under the narrow interpretation of the ABM treaty, in 1987 the Department of Defense requested authority to proceed with SDI tests under the broad interpretation. As a result, Congress inserted requirements into the 1988 and 1989 Defense Authorization Bills requiring SDI-related tests to be conducted within the narrow interpretation of the ABM treaty.

Although the Soviet Union had consistently said that strategic arms reductions were impossible as long as the United States was determined to proceed with SDI, in the fall of 1989 it agreed to allow negotiations on a Strategic Arms Reduction (START) agreement to proceed without a prior SDI compromise. While this was reported as a major Soviet concession, in fact the USSR was simply allowing the talks to proceed, not changing its opinion of SDI: it reserved the right to withdraw from any future strategic agreement unless an acceptable solution was found to the problem of SDI. By thus putting the United States in the position of seeming willing to give up a completed START agreement rather than compromise on SDI, the Soviets were simply applying more pressure.

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(8) See Douglas Ross, "SDI and Canadian-American Relations," in America's Alliances and Canadian-American Relations, Lauren McKinsey and Kim Nossal eds., Summerhill Press, Toronto, 1988.

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THE REDEFINITION OF SDI

After the initial popularity of SDI, it became obvious to most observers than an astrodome defence of the United States was impossible. (Even if an astrodome against ballistic missiles could be built, it still couldn't deal with cruise missiles.) While President Reagan was still speaking in 1986 of SDI leading to "a shield that missiles could not penetrate--a shield that could protect us from nuclear missiles just as a roof protects a family from rain,"(9) and SDI constituted the single largest item in the US defence budget (larger than the technological research base of the Army, Navy and Air Force combined), organizations such as the Federation of Concerned Scientists and the Congressional Office of Technology Assessment continued to issue increasingly critical reports on SDI. As early as 1984 the emphasis within the SDI program had shifted from the most exotic technologies to more "mature" ones such as kinetic energy weapons--metal "bullets" which destroy enemy missiles by high-speed collision--as Fen Hampson notes, the modern version of cannon balls.(10)

As both the conceptual and technical problems related to SDI became more apparent, the Strategic Defense Initiative Organization (SDIO), which ran the program, became more agile in adapting the program to be all things to all people. In 1987 the American Physical Society issued an authoritative report which agreed with critics that technologies such as directed energy weapons could not even be properly evaluated for ABM use without at least another decade of testing.(11) In that year the emphasis of SDI planners moved away from long-term deployment of a multi-layered defence to the interim deployment of a "Phase I" system by the mid-1990s, based on thousands of space-based "Smart Rocks" which would attack missiles by crashing into them. Critics ridiculed this $115 billion

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(9) Quoted in "Strategic Defensive Arms Control: The ABM Treaty and Star Wars," (1989).

(10) Hampson (1989), p. 238.

(11) American Physical Society Study Group, Science and Technology of Directed Energy Weapons, American Physical Society, Woodbury, New York, 1981.

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idea as a plan to simply "get something up there" and commit the government to future funding by forcing it to break the ABM restraints once and for all. A major redefinition of SDI occurred when its advocates began to talk about it enhancing (rather than replacing) deterrence by inserting a further measure of uncertainty into Soviet war plans, and played up the possibility of SDI research developing effective Anti-Satellite (ASAT) weapons.(12)

By 1988 SDI planners acknowledged that even a Phase I system could not be complete before the turn of the century, but added that the cost would now be $69 billion, some $46 billion less than the estimate provided just months before. In June, the Congressional Office of Technology Assessment issued another stinging report on SDI, agreeing with the American Physical Society that exotic technologies would not be effective for at least a decade. It also warned that even a Phase I deployment "would require an act of faith" that later phases would prove effective, and that "the long run ability of the Strategic Defense Initiative (SDI) to stay ahead of an ever-changing threat ...is questionable."(13) In a replay of the ABM debate of 20 years before, Senator Sam Nunn proposed that SDI focus on developing an Accidental Launch Protection System (ALPS). In a move that highlighted the discouraging public relations orientation of SDI, "Smart Rocks" became a smaller and smarter system, "Brilliant Pebbles." (One Democratic Senator complained about the "seemingly endless search for near-term deployment possibilities, silver bullets or brilliant pebbles or genius dust, whatever this year's fashion in SDI designer systems happens to be.")(14)

With the departure of Ronald Reagan, SDI lost its greatest supporter. Even the Reagan administration had not remained committed to

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(12) "Star Wars Gets Offensive Role: Satellite Killer," The New York Times, 27 November 1988 and Senator Tom Harkin, "Star Wars: A Trojan Horse for ASAT Weapons," in Arms Control Today, March 1989.

(13) Quoted in Arms Control and National Security (1989), p. 80.

(14) Gary Chapman, "Smart Rocks, Brilliant Pebbles, Genius Dust?" The Bulletin of the Atomic Scientists, November 1989.

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the original concept of SDI, however. Frank Carlucci, Weinberger's replacement as Secretary of Defense, was quoted as admitting that Star Wars would not provide the "impenetrable shield" envisioned by the President. As political support for SDI waned, so did its funding. Although Congress had always trimmed the administration requests for funds, in 1990 for the first time SDI received less funding than it had in the previous year (see Figure 2).

With the arrival of the Bush administration, SDI's prospects looked dimmer still. Brent Scowcroft, a known SDI critic, became Bush's National Security Advisor, and according to John Tower, Bush's first choice as Secretary of Defense, "the Bush administration did not consider it possible to 'devise an umbrella that can protect the entire American population from nuclear incineration'."(15) In his National Security Directive 14 on ICBM Modernization and Strategic Defense Initiative, signed on 14 June 1989, Bush called for the development of "options for strengthening deterrence and stability through the deployment of strategic defences based on advanced technologies." The irony of identifying SDI's role as being to enhance deterrence is that the initiative has now become merely one of the many US programs designed to do this, rather than being a unique answer to the threat of nuclear weapons. As five members of the Senate Defense Appropriations Subcommittee pointed out in a letter to Sam Nunn

> The administration's explicit, and long overdue rejection of SDI's original goal of an "astrodome" defense that substitutes for deterrence should alter the way the program is viewed. SDI is now only another means of achieving deterrence... We do not believe the Congress should provide any additional increase in funding for SDI until it can identify what gap in future strategic deterrence SDI would fill.(16)

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(15) "Tower Declares Star Wars Shield Can't Be Complete," The New York Times, 27 January 1989.

(16) Bruce MacDonald, "Lost in Space: SDI Struggles Through its Sixth Year," Arms Control Today, September 1989, p. 22.

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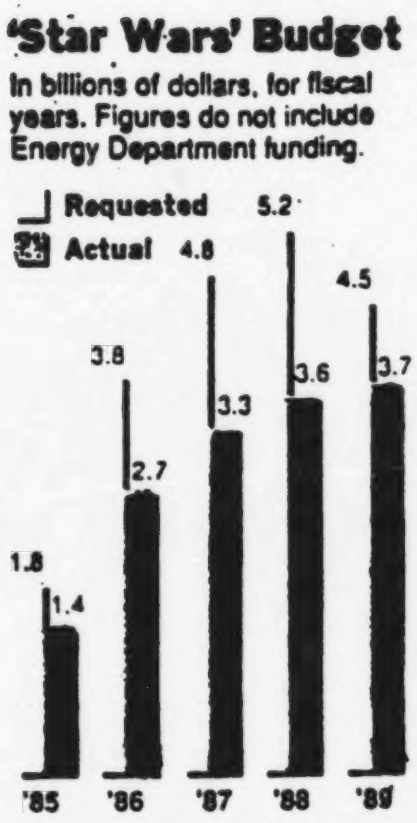
FIGURE 2



1990 funding is 3.5 billion

Source: Department of Defense. The New York Times, Jan. 27, 1989.

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CONCLUSION

While advocates of SDI accuse its critics of forgetting that it is a research program rather than a weapons system, and that you can't criticize something that does not yet exist, in fact the essence of the SDI debate was resolved 20 years ago in the ABM debate. Paul Nitze, President Reagan's senior arms control advisor, outlined three basic requirements for a strategic defence system: it must be 1) militarily effective 2) survivable against Soviet attack and 3) "cost effective at the margin," meaning that the United States must be able to maintain it more cheaply than the Soviet Union could increase its forces or deploy countermeasures to overcome it.(17) SDI realistically promised none of these.

As Dr. Wolfgang Panofsky, an internationally recognized physicist and longtime advisor to Presidents Eisenhower, Kennedy and Carter, put it in 1987,

> I think there have been advances since 1972 that have changed the picture. The largest advances have been in computing, data processing, sensor technology, the emergence of the free electron laser, and the possibility, at least, of a nuclear-pumped X-ray laser... However, the main point about these advances is that none of them deserve the term "breakthrough." They've been evolutionary. Moreover, all these evolutions have relevance both to offensive as well as defensive technologies...in my view, there is no evidence that this evolution has tilted the balance against nuclear weapons delivered by ballistic missiles. In 1972, the basis of the treaty was a common realization by both parties that in the offense-defense balance regarding ballistic missiles, the offense clearly was ahead of the game in terms of any economic or technical criteria. I see no persuasive evidence from the technical situation...that the balance is different today.(18)

Given the ever-shifting nature of the SDI program, it is obvious that the original objectives of the program were believed by no one except perhaps

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(17) "Strategic Defenses and the ABM Treaty," in Arms Control and National Security (1989), p. 77.

(18) "A Physicist Evaluates SDI," Arms Control Today, June 1987.

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President Reagan. While SDI is likely to remain a significant item in the U.S. defence budget for the near future (if only because of bureaucratic inertia), the program in the 1990s is likely to bear little resemblance to that outlined in 1983. Ultimately the fault of SDI was that it attempted to institute a technological "quick fix" for the problem of war in the nuclear age. As anyone who has thought about this issue realizes, however, the root of the problem still lies with human beings and not with the weapons they have invented.

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APPENDIX

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Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems

Signed at Moscow May 26, 1972
Ratification advised by U.S. Senate August 3, 1972
Ratified by U.S. President September 30, 1972
Proclaimed by U.S. President October 3, 1972
Instruments of ratification exchanged October 3, 1972
Entered into force October 3, 1972

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Proceeding from the premise that nuclear war would have devastating consequences for all mankind,

Considering that effective measures to limit anti-ballistic missile systems would be a substantial factor in curbing the race in strategic offensive arms and would lead to a decrease in the risk of outbreak of war involving nuclear weapons,

Proceeding from the premise that the limitation of anti-ballistic missile systems, as well as certain agreed measures with respect to the limitation of strategic offensive arms, would contribute to the creation of more favorable conditions for further negotiations on limiting strategic arms,

Mindful of their obligations under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons,

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to take effective measures toward reductions in strategic arms, nuclear disarmament, and general and complete disarmament,

Desiring to contribute to the relaxation of international tension and the strengthening of trust between States,

Have agreed as follows:

Article I

1. Each party undertakes to limit anti-ballistic missile (ABM) systems and to adopt other measures in accordance with the provisions of this Treaty.

2. Each Party undertakes not to deploy ABM systems for a defense of the territory of its country and not to provide a base for such a defense, and not to deploy ABM systems for defense of an individual region except as provided for in Article III of this Treaty.

Article II

1. For the purpose of this Treaty an ABM system is a system to counter strategic ballistic missiles or their elements in flight trajectory, currently consisting of:

(a) ABM interceptor missiles, which are interceptor missiles constructed and deployed for an ABM role, or of a type tested in an ABM mode;

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(b) ABM launchers, which are launchers constructed and deployed for launching ABM interceptor missiles; and

(c) ABM radars, which are radars constructed and deployed for an ABM role, or of a type tested in an ABM mode.

2. The ABM system components listed in paragraph 1 of this Article include those which are:

(a) operational;
(b) under construction;
(c) undergoing testing;
(d) undergoing overhaul, repair or conversion; or
(e) mothballed.

Article III

Each Party undertakes not to deploy ABM systems or their components except that:

(a) within one ABM system deployment area having a radius of one hundred and fifty kilometers and centered on the Party's national capital, a Party may deploy: (1) no more than one hundred ABM launchers and no more than one hundred ABM interceptor missiles at launch sites, and (2) ABM radars within no more than six ABM radar complexes, the area of each complex being circular and having a diameter of no more than three kilometers; and

(b) within one ABM system deployment area having a radius of one hundred and fifty kilometers and containing ICBM silo launchers, a Party may deploy: (1) no more than one hundred ABM launchers and no more than one hundred ABM interceptor missiles at launch sites, (2) two large phased-array ABM radars comparable in potential to corresponding ABM radars operational or under construction on the date of signature of the Treaty in an ABM system deployment area containing ICBM silo launchers, and (3) no more than eighteen ABM radars each having a potential less than the potential of the smaller of the above-mentioned two large phased-array ABM radars.

Article IV

The limitations provided for in Article III shall not apply to ABM systems or their components used for development or testing, and located within current or additionally agreed test ranges. Each Party may have no more than a total of fifteen ABM launchers at test ranges.

Article V

1. Each Party undertakes not to develop, test, or deploy ABM systems or components which are sea-based, air-based, space-based, or mobile land-based.

2. Each Party undertakes not to develop, test, or deploy ABM launchers for launching more than one ABM interceptor missile at a time from each launcher, not to modify deployed launchers to provide them with such a capability, not to develop, test, or deploy automatic or semi-automatic or other similar systems for rapid reload of ABM launchers.

Article VI

To enhance assurance of the effectiveness of the limitations on ABM systems and their components provided by the Treaty, each Party undertakes:

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(a) not to give missiles, launchers, or radars, other than ABM interceptor missiles, ABM launchers, or ABM radars, capabilities to counter strategic ballistic missiles or their elements in flight trajectory, and not to test them in an ABM mode; and

(b) not to deploy in the future radars for early warning of strategic ballistic missile attack except at locations along the periphery of its national territory and oriented outward.

Article VII

Subject to the provisions of this Treaty, modernization and replacement of ABM systems or their components may be carried out.

Article VIII

ABM systems or their components in excess of the numbers or outside the areas specified in this Treaty, as well as ABM systems or their components prohibited by this Treaty, shall be destroyed or dismantled under agreed procedures within the shortest possible agreed period of time.

Article IX

To assure the viability and effectiveness of this Treaty, each Party undertakes not to transfer to other States, and not to deploy outside its national territory, ABM systems or their components limited by this Treaty.

Article X

Each Party undertakes not to assume any international obligations which would conflict with this Treaty.

Article XI

The Parties undertake to continue active negotiations for limitations on strategic offensive arms.

Article XII

1. For the purpose of providing assurance of compliance with the provisions of this Treaty, each Party shall use national technical means of verification at its disposal in a manner consistent with generally recognized principles of international law.

2. Each Party undertakes not to interfere with the national technical means of verification of the other Party operating in accordance with paragraph 1 of this Article.

3. Each Party undertakes not to use deliberate concealment measures which impede verification by national technical means of compliance with the provisions of this Treaty. This obligation shall not require changes in current construction, assembly, conversion, or overhaul practices.

Article XIII

1. To promote the objectives and implementation of the provisions of this Treaty, the Parties shall establish promptly a Standing Consultative Commission, within the framework of which they will:

(a) consider questions concerning compliance with the obligations assumed and related situations which may be considered ambiguous;

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(b) provide on a voluntary basis such information as either Party considers necessary to assure confidence in compliance with the obligations assumed;

(c) consider questions involving unintended interference with national technical means of verification;

(d) consider possible changes in the strategic situation which have a bearing on the provisions of this Treaty;

(e) agree upon procedures and dates for destruction or dismantling of ABM systems or their components in cases provided for by the provisions of this Treaty;

(f) consider, as appropriate, possible proposals for further increasing the viability of this Treaty, including proposals for amendments in accordance with the provisions of this Treaty;

(g) consider, as appropriate, proposals for further measures aimed at limiting strategic arms.

2. The Parties through consultation shall establish, and may amend as appropriate, Regulations for the Standing Consultative Commission governing procedures, composition and other relevant matters.

Article XIV

1. Each Party may propose amendments to this Treaty. Agreed amendments shall enter into force in accordance with the procedures governing the entry into force of this Treaty.

2. Five years after entry into force of this Treaty, and at five-year intervals thereafter, the Parties shall together conduct a review of this Treaty.

Article XV

1. This Treaty shall be of unlimited duration.

2. Each Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests. It shall give notice of its decision to the other Party six months prior to withdrawal from the Treaty. Such notice shall include a statement of the extraordinary events the notifying Party regards as having jeopardized its supreme interests.

Article XVI

1. This Treaty shall be subject to ratification in accordance with the constitutional procedures of each Party. The Treaty shall enter into force on the day of the exchange of instruments of ratification.

2. This Treaty shall be registered pursuant to Article 102 of the Charter of the United Nations.

DONE at Moscow on May 26, 1972, in two copies, each in the English and Russian languages, both texts being equally authentic.

FOR THE UNITED STATES OF AMERICA

RICHARD NIXON

President of the United States of America

FOR THE UNION OF SOVIET SOCIALIST REPUBLICS

L. I. BREZHNEV

General Secretary of the Central Committee of the CPSU

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APPENDIX B

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Protocol to the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems

Signed at Moscow July 3, 1974
Ratification advised by U.S. Senate November 10, 1975
Ratified by U.S. President March 19, 1976
Instruments of ratification exchanged May 24, 1976
Proclaimed by U.S. President July 6, 1976
Entered into force May 24, 1976

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Proceeding from the Basic Principles of Relations between the United States of America and the Union of Soviet Socialist Republics signed on May 29, 1972,

Desiring to further the objectives of the Treaty between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems signed on May 26, 1972, hereinafter referred to as the Treaty,

Reaffirming their conviction that the adoption of further measures for the limitation of strategic arms would contribute to strengthening international peace and security,

Proceeding from the premise that further limitation of anti-ballistic missile systems will create more favorable conditions for the completion of work on a permanent agreement on more complete measures for the limitation of strategic offensive arms,

Have agreed as follows:

Article I

1. Each Party shall be limited at any one time to a single area out of the two provided in Article III of the Treaty for deployment of anti-ballistic missile (ABM) systems or their components and accordingly shall not exercise its right to deploy an ABM system or its components in the second of the two ABM system deployment areas permitted by Article III of the Treaty, except as an exchange of one permitted area for the other in accordance with Article II of this Protocol.

2. Accordingly, except as permitted by Article II of this Protocol: the United States of America shall not deploy an ABM system or its components in the area centered on its capital, as permitted by Article III(a) of the Treaty, and the Soviet Union shall not deploy an ABM system or its components in the deployment area of intercontinental ballistic missile (ICBM) silo launchers as permitted by Article III(b) of the Treaty.

Article II

1. Each Party shall have the right to dismantle or destroy its ABM system and the components thereof in the area where they are presently deployed and to deploy an ABM system or its components in the alternative area permitted by Article III of the Treaty, provided that prior to initiation of construction, notification is given in accord

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with the procedure agreed to in the Standing Consultative Commission, during the year beginning October 3, 1977 and ending October 2, 1978, or during any year which commences at five year intervals thereafter, those being the years for periodic review of the Treaty, as provided in Article XIV of the Treaty. This right may be exercised only once.

2. Accordingly, in the event of such notice, the United States would have the right to dismantle or destroy the ABM system and its components in the deployment area of ICBM silo launchers and to deploy an ABM system or its components in an area centered on its capital, as permitted by Article III(a) of the Treaty, and the Soviet Union would have the right to dismantle or destroy the ABM system and its components in the area centered on its capital and to deploy an ABM system or its components in an area containing ICBM silo launchers, as permitted by Article III(b) of the Treaty.

3. Dismantling or destruction and deployment of ABM systems or their components and the notification thereof shall be carried out in accordance with Article VIII of the ABM Treaty and procedures agreed to in the Standing Consultative Commission.

Article III

The rights and obligations established by the Treaty remain in force and shall be complied with by the Parties except to the extent modified by this Protocol. In particular, the deployment of an ABM system or its components within the area selected shall remain limited by the levels and other requirements established by the Treaty.

Article IV

This Protocol shall be subject to ratification in accordance with the constitutional procedures of each Party. It shall enter into force on the day of the exchange of instruments of ratification and shall thereafter be considered an integral part of the Treaty.

DONE at Moscow on July 3, 1974, in duplicate, in the English and Russian languages, both texts being equally authentic.

For the United States of America:

RICHARD NIXON

President of the United States of America

For the Union of Soviet Socialist Republics:

L. I. BREZHNEV

General Secretary of the Central Committee of the CPSU

Étude générale

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LA GUERRE DES ÉTOILES: L'INITIATIVE DE DÉFENSE STRATÉGIQUE

James Lee
Division des affaires politiques et sociales

Janvier 1990

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LA GUERRE DES ÉTOILES: L'INITIATIVE DE DÉFENSE STRATÉGIQUE

INTRODUCTION

Depuis que les deux super-puissances ont acquis dans les années 1960 des missiles balistiques intercontinentaux (ICBM) d'une précision et d'une puissance extrêmes, la dissuasion assurait la sécurité internationale du fait qu'en cas de conflit la destruction mutuelle était assurée. Chacun étant capable de déclencher des attaques "stratégiques" contre les forces vives de son adversaire (population, industries et ressources plutôt que simplement les forces armées), on était dans une situation d'équilibre incommode mais stable.

Dans un discours à la Nation, en mars 1983, l'ancien Président des États-Unis, Ronald Reagan, annonçait le lancement du programme de recherche appelé "Initiative de Défense Stratégique" (IDS), destiné à mettre au point une parade contre les missiles nucléaires. Au cours des six années suivantes, l'IDS ou la "Guerre des étoiles" comme on l'a couramment appelée depuis, devint le programme de recherche de défense de temps de paix le plus important de l'histoire des États-Unis, avec un budget d'environ 17 milliards de dollars(1). Après la déclaration de 1983, les partisans et les adversaires du programme ont refait (avec des modifications mineures) le débat que les partisans et les adversaires des systèmes Anti-Missiles Balistiques (système AM) avaient eu il y a 20 ans. Bien que la justification technologique et le soutien politique à l'IDS aient diminué au fil des années, et plus particulièrement depuis le départ du président Reagan, le programme absorbe encore de nos jours une part importante du budget américain de recherche consacré à la défense et continue à avoir des effets sensibles sur le contrôle des armements et d'autres questions.

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(1) Dans ce document, tous les montants d'argent sont exprimés en dollars US.

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LE DÉBAT SUR LE SYSTÈME AM

Au cours des années 1950, les États-Unis et l'URSS avaient tous les deux commencé à développer des systèmes de défense aérienne tels que les systèmes américains Nike-Zeus et Nike-X, qui se composaient d'un réseau de radars et de missiles Sol-Air (missiles SA) pour suivre et intercepter les bombardiers ennemis capables de lancer des armes nucléaires. Avec l'entrée en service des ICBM, qui pouvaient acheminer des ogives nucléaires de façon à la fois beaucoup plus rapide et plus économique, ces systèmes n'étaient plus adaptés à la défense du territoire national. Il devint vite évident que la comparaison entre l'offensive et la défensive, en ce qui concerne les ICBM, fournissait un net avantage à l'offensive: seule une défense quasi parfaite valait la peine d'être mise en place puisqu'il suffisait que quelques armes nucléaires la traversent pour causer des dommages inacceptables; il était beaucoup plus facile et meilleur marché de construire plus de missiles ou même des leurres que de développer et de déployer un système AM efficace.

L'Union soviétique, étant parvenue à la même constatation et voulant assurer sa défense aérienne, a été amenée à déployer un système AM rudimentaire autour de Moscou. Ce déploiement du système AM soviétique a donné des arguments aux partisans américains de systèmes équivalents. Les opposants, eux, prétendaient que les performances des systèmes AM étaient insuffisantes en regard de leur coût et qu'ils accroissaient les risques de conflit nucléaire en minant le pouvoir de dissuasion de l'adversaire. En fait, l'argument était le suivant: étant donné que les systèmes AM ne pouvaient pas assurer aux États-Unis une défense parfaite contre une "première frappe" de missiles coordonnée, leur seul intérêt réel tenait au fait qu'ils constituaient une protection contre les quelques missiles qui auraient survécu à une première frappe des États-Unis eux-mêmes et auraient été lancés en représailles; c'est-à-dire pour éviter une "deuxième frappe". Le dernier des arguments mais non le moindre, était qu'en poursuivant une course aux armements offensifs-défensifs, les systèmes AM menaçaient les accords ultérieurs sur le contrôle des armements.

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En 1967, n'ayant pas réussi à convaincre le Premier ministre soviétique Alekseï Kossyguine des avantages d'une limitation des systèmes AM, l'administration Johnson annonçait sa décision de déployer le système AM Sentinel, et bien que reconnaissant les problèmes d'efficacité du système, elle justifiait ce déploiement comme constituant une protection contre des lancements accidentels de missiles soviétiques ou contre une future menace de missiles chinois. Dès 1969, les Soviétiques avaient commencé à remettre en question leurs objections à la limitation des systèmes AM, et la nouvelle administration Nixon avait annoncé qu'elle déploierait, au lieu du système Sentinel, le système Safeguard conçu pour assurer la protection des installations militaires plutôt que des populations, ce qui est plus facile (car il y a bien moins d'installations militaires que de villes et de centres urbains).

Au cours des années qui ont suivi, le débat sur les systèmes AM a fait rage aux États-Unis alors que dans le même temps on poursuivait la construction du système Safeguard. L'administration Nixon avait entamé des discussions sur la réduction des armements stratégiques avec l'Union soviétique en 1969 et s'était rapidement rendu compte que la limitation des systèmes AM était à la fois nécessaire et souhaitable pour parvenir à une limitation ou à une réduction des armements nucléaires. En mai 1972, les superpuissances signaient le traité concernant la limitation des systèmes anti-balistiques, dans le cadre des accords SALT I. Conformément au traité, dont la durée était illimitée, chaque partie ne pouvait déployer que deux systèmes AM symboliques dotés de 100 missiles chacun. En 1974, ce traité fut amendé pour n'autoriser qu'un seul site de 100 missiles. Hormis ces systèmes, le traité interdisait l'essai et le déploiement en mer, dans les airs, dans l'espace ou sur des plate-formes terrestres mobiles, de systèmes ou éléments de défense contre les missiles balistiques (voir annexe). L'Union soviétique choisissait de conserver son système AM autour de Moscou tandis que les États-Unis optaient pour un déploiement du leur pour protéger une base d'ICBM près de Grand Forks dans le Dakota du Nord. Le système de Grand Forks fut désactivé en 1976, 10 mois seulement après sa mise en service, car on le jugeait trop coûteux et inefficace. Le

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système AM soviétique, qui est du niveau technologique de celui de Grand Forks, n'a jamais mis en oeuvre la totalité de sa dotation autorisée de 100 missiles(2).

L'INITIATIVE DE DÉFENSE STRATÉGIQUE

En 1980, Ronald Reagan a fait campagne sur la nécessité de viser la "fenêtre de vulnérabilité" par laquelle l'Union soviétique pouvait soi-disant menacer les États-Unis d'une attaque nucléaire réussie. Après un lobbying permanent des groupes de défense de la droite et quatre réunions avec Edward Teller, appelé le "père de la bombe H" et partisan convaincu du système AM, le discours de Reagan du 23 mars fut rédigé par Robert McFarlane qui devient plus tard son conseiller en matière de sécurité nationale. Dans une allocution télévisée, le président Reagan rejeta les hypothèses du traité concernant les systèmes AM, faisant appel à la communauté scientifique.

> ...que ceux qui nous ont donné les armements nucléaires mettent leurs grands talents au service de l'humanité et de la paix dans le monde et qu'ils nous donnent les moyens de rendre ces armes nucléaires impuissantes et désuètes.

Pour tenir de "se sortir d'un avenir dans lequel la sécurité ne serait assurée que par la possibilité de représailles offensives", soutint le président Reagan "ne vaut-il pas la peine d'investir pour libérer le monde de la menace d'une guerre nucléaire(3)"?

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(2) Voir Eric Stubbs, "Soviet Strategic Defence Technology", dans Bulletin of the Atomic Scientists, avril 1987. Voir également le Council on Economic Priorities, "Soviet Strategic Defense Program: A Decade Behind the United States", dans Star Wars: The Economic Fallout, Ballinger Publishing Co., Cambridge, Mass., 1988.

(3) On pourra consulter les propositions du président Reagan dans Sidney D. Drell, Philip J. Farley et David Holloway, The Reagan Defense Initiative: A Technical, Political and Arms Control Assessment, Rapport spécial, Center for International Security and Amrs Control, Université Stanford, Californie, juillet 1984, p. 103.

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Le Présidant Reagan a fait une esquisse d'un astrodôme non nucléaire capable d'intercepter et de détruire les missiles balistiques en vol. Étant donné la complexité d'une telle tâche, le système de l'IDS ne serait pas limité aux technologies actuelles des missiles balistiques qui attaquent les missiles au moment où ils approchent de leur cible; il utiliserait également des technologies futuristes comme celles des armes à énergie dirigée, des canons à rail électromagnétique, des détecteurs et des armements basés dans l'espace pour constituer un système multicouches qui poursuivrait et attaquerait les missiles durant toutes leurs phases de vol, ce qui augmenterait donc les chances de les détruire. (Voir figure 1 qui donne également des explications sur nombre des termes techniques utilisés dans les pages suivantes.)

Tel que conçu au départ, le système de l'IDS aurait dû être capable de certaines fonctions vitales, selon le Dr Richard DeLauer, Sous-secrétaire d'État à la Défense chargé de la recherche et de l'ingénierie(4):

- **Un dispositif rapide et fiable de détection des attaques et de déclenchement des opérations de défense**

  Il faut assurer une défense globale ininterrompue pour détecter toute attaque éventuelle, pour en déterminer la destination et l'intensité et pour transmettre toutes les données nécessaires à l'interception en phase de propulsion et à la poursuite en phase de mi-parcours.

- **La poursuite ininterrompue de tous les objets hostiles sur toute leur trajectoire**

  Le système de poursuite doit réunir tous les renseignements nécessaires et communiquer les données exactes et ponctuelles aux systèmes d'interception pour commander l'attaque.

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(4) Richard D. DeLauer, "Antiballistic Missile Defense -- The Opportunity and the Challenge", NATO's Sixteen Nations, vol. 29, n° 6, novembre 1984, p. 22 à 26.

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FIGURE 1

Les phases de vol d'un missile

L'Initiative de Défense Stratégique a pour but de développer une défense multi-couches destinée à attaquer les missiles durant leur vol. On peut diviser le vol d'un missile balistique en quatre phases, chacune de celles-ci présentant des problèmes différents et des occasions de défense possibles.

Le vol débute par la "phase de propulsion", c'est-à-dire les quelques minutes correspondant à la mise à feu et à la combustion du propulseur du missile. Pendant cette phase, les missiles sont des objectifs de grande valeur, car ils n'ont pas largué leurs charges militaires. Une attaque réussie durant cette phase du vol peut entraîner la destruction d'un seul coup d'une douzaine ou plus d'ogives nucléaires et de leurres. De telles attaques nécessitent toutefois en principe des armes basées dans l'espace qui seront sûrement coûteuses et vulnérables. Même si l'éclat du propulseur du missile est facilement détectable lors de cette phase, l'attaque ne peut se faire que dans un court laps de temps. La combustion des propulseurs de missiles balistiques actuels dure de trois à cinq minutes et avec les "propulseurs à combustion rapide" de l'avenir elle durera une minute ou même moins, rendant extrêmement difficile une attaque pendant cette phase.

La "phase de post-combustion" correspond à la période pendant laquelle la charge utile appelée "bus" manoeuvre pour mettre ses ogives et ses leurres sur leur trajectoire: les avantages et les inconvénients d'une attaque du missile pendant cette phase sont semblables à ceux de la phase précédente, bien que les moteurs du bus soient plus petits et donc plus difficiles à détecter que les propulseurs principaux du missile.

La "phase de mi-parcours" est la partie centrale relativement longue du vol pendant laquelle les ogives se meuvent dans l'espace en compagnie de milliers de leurres et autres "aides à la pénétration". Cette phase dure de 20 à 25 minutes pour un ICBM, ce qui donne plus de temps pour l'attaquer. Cependant, il serait très difficile de faire la différence entre les ogives et les milliers de leurres.

La "phase terminale" ou "phase de rentrée" qui dure quelques dizaines de secondes correspond à la rentrée dans l'atmosphère des têtes militaires (d'où le terme véhicule de rentrée) et éventuellement à l'explosion sur les objectifs ou au-dessus. Lors de cette phase, les exigences technologiques de la défense sont moindres, mais les délais sont extrêmement courts et on aurait besoin d'un très grand nombre d'intercepteurs pour une défense à l'échelle du pays puisque chaque zone d'objectif devrait être défendue séparément.

Source: Arms Control and National Security: An Introduction.

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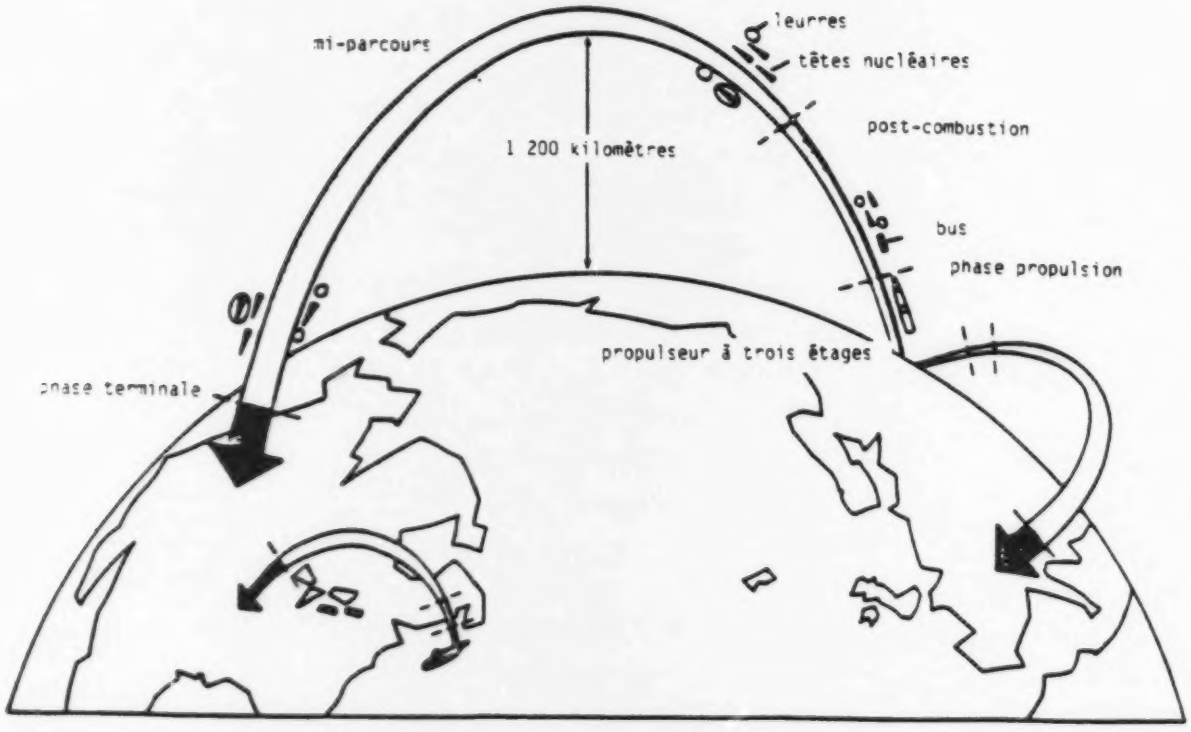
FIGURE 1 (suite)



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- **Des moyens efficaces d'interception et de destruction**

  La défense doit être en mesure de faire face à toute attaque, y compris à un lancement simultané massif de missiles.

- **L'interception en phase terminale**

  La défense doit être capable d'intervenir à relativement court terme pour anéantir les ogives lors de leur rentrée dans l'atmosphère.

- **Les systèmes de commandement et de transmission et les moyens informatiques**

  La défense doit disposer des éléments de liaison nécessaires pour que ses différentes composantes puissent intervenir efficacement.

Selon M. DeLauer, l'intégration de ces technologies à un système cohérent supposerait des percées dans huit domaines clé, chacun d'eux "étant équivalent ou supérieur au projet Manhattan", qui a conduit à la réalisation de la première bombe atomique(5). Le ministère de la Défense des États-Unis a, à son tour, défini les cinq domaines techniques de l'IDS dans lesquels il doit concentrer ses activités(6).

- **Surveillance, acquisition et poursuite**

  Les moyens techniques doivent permettre de détecter, de poursuivre et de reconnaître les objets à toutes les phases de leur trajectoire balistique, tout en restant opérationnels malgré les attaques directes de l'ennemi et dans un milieu soumis aux effets des armes nucléaires. Tous les systèmes défensifs envisagés confient la première alerte à des capteurs spatiaux et font intervenir des satellites pour le

(5) Tiré de Fen Hampson, "The Strategic Defense Initiative", dans Unguided Missiles, W.W. Norton and Co., New York, 1989, p. 238

(6) DeLauer (1984).

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commandement, la surveillance et les transmissions, ainsi que pour l'ensemble de l'appareillage de commandement. Il reste encore à mettre au point les moyens technologiques et tactiques nécessaires pour assurer la protection des engins spatiaux du système de défense en cas d'attaque.

- **Les armes à énergie dirigée**

Les armes à énergie dirigée ont pour objectif de concentrer en un court laps de temps suffisamment d'énergie sur la cible pour la détruire. Dans ce domaine, la recherche se consacre essentiellement à quatre possibilités: les lasers spatiaux, les lasers installés au sol, les faisceaux de particules spatiaux et les armes à énergie dirigée d'origine nucléaire.

- **Les armes à énergie cinétique**

Ces armes ont pour objectif d'atteindre les missiles offensifs avec un objet inerte se déplaçant à une vitesse telle que la force de l'impact entraîne leur destruction. Dans ce domaine, la recherche porte sur des missiles intercepteurs et sur des systèmes de propulsion à très grande vitesse, comme le canon à rail électromagnétique stationné dans l'espace, qui utiliserait un champ magnétique pour propulser un projectile métallique le long d'un rail et l'envoyer dans l'espace à très grande vitesse.

- **Système de commandement et de transmission**

On devait développer des technologies pour obtenir un système de commandement et de transmission désigné par le sigle BM/C^3 (battle management/command, control and communication) répondant à des exigences élevées de précision, de fiabilité, d'invulnérabilité, de résistance et de rendement.

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- **Programmes de soutien**

Il restait à résoudre un certain nombre de questions relatives au soutien de l'IDS et voici certains programmes qui y étaient consacrés:

- puissance de destruction et protection des cibles;
- "survivabilité" du système;
- énergie spatiale disponible et conversion énergétique;
- logistique spatiale.

LE CONTRÔLE DES ARMEMENTS

Les adversaires de l'Initiative de défense stratégique ont dénoncé immédiatement le programme comme étant une menace pour le traité concernant les systèmes AM, point de départ d'un contrôle des armements nucléaires, puisqu'il propose le déploiement éventuel d'éléments de systèmes AM dans l'espace en se servant de nouvelles technologies. En octobre 1985, l'administration américaine déclarait qu'après une étude approfondie du traité concernant les systèmes AM (interprétation "juridiquement correcte" ou "au sens large") celui-ci n'interdisait pas de tester et de déployer dans l'espace de nouvelles technologies, mais les limitait aux seules technologies disponibles au moment de la signature du traité. Les adversaires, y compris la plupart des négociateurs des traités SALT I et sur les systèmes AM, n'étaient pas d'accord avec cette interprétation, lui préférant l'interprétation traditionnelle ou "restrictives". Comme l'a déclaré l'ancien président Nixon:

> Dans le cas de ce qui fut présenté au Sénat, il s'agissait de ce que nous appelons l'interprétation restrictive. Cela ne fait aucun doute(7).

L'Union soviétique s'opposait de manière inflexible à l'IDS, soutenant qu'elle était destinée à produire des armes basées dans l'espace et non un système de défense. Elle poursuivait néanmoins ses recherches

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(7) Tiré de "Strategic Defensive Arms Control: The ABM Treaty and Star Wars", dans l'excellente publication intitulée Arms Control and National Security, The Arms Control Association, Washington, 1989, p. 73.

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fondamentales sur les systèmes anti-missiles, prétendant que celles-ci étaient autorisées par le traité et n'avaient pas pour but de déployer un autre système AM.

Au Congrès américain, la nouvelle interprétation du traité concernant les systèmes AM par l'administration provoqua une opposition croissante à l'IDS. Mis à part le fort lobby du Congrès pour le contrôle des armements qui chérissait le traité AM pour sa valeur intrinsèque, beaucoup de membres du Congrès avaient le sentiment que, s'il prenait la fantaisie à une administration de donner une nouvelle interprétation à un traité, le rôle du Congrès, chargé d'entériner les traités, deviendrait marginal.

La nouvelle interprétation du traité concernant les systèmes AM causait également une gêne parmi les alliés de l'Amérique. Bien que la Grande-Bretagne et l'Allemagne de l'Ouest aient accepté l'invitation des États-Unis de participer aux programmes de recherche sur l'IDS en 1985 (Israël a dit oui en 1986), un nombre de plus en plus important d'alliés ont réclamé le retour à l'interprétation traditionnelle du traité concernant les systèmes AM. Si le Canada a donné son accord à une participation de l'industrie privée canadienne aux programmes de l'IDS, il a décliné l'offre de participer au niveau gouvernemental à cause de sa position concernant le traité sur les systèmes AM(8).

Bien que l'administration ait accepté, sous les fortes pressions du Congrès, d'agir conformément à l'interprétation restrictive du traité sur les systèmes AM, le ministère de la Défense a demandé en 1987 l'autorisation de procéder à des essais de l'IDS en s'appuyant sur l'interprétation "au sens large" du traité. Cela a amené le Congrès à préciser dans les lois de programmes de défense de 1988 et 1989 que les essais réalisés dans le cadre de l'IDS devaient l'être en tenant compte de l'interprétation restrictive du traité sur les systèmes AM.

Quoique l'Union soviétique ait constamment indiqué que la réduction des armements stratégiques était impossible tant que les États-Unis étaient décidés à poursuivre le programme de l'IDS, elle acceptait, à

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(8) Voir Douglas Ross "SDI and Canadian-American Relations", dans America's Alliances and Canadian-American Relations, Lauren McKinsey et Kim Nossal, éd., Summerhill Press, Toronto, 1988.

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l'automne 1989, de reprendre les négociations sur l'accord concernant la réduction des armements stratégiques (START) sans demander de compromis sur l'IDS. Alors qu'on considérait ceci comme une concession majeure des Soviétiques, en fait il s'agissait pour eux de permettre simplement la reprise des conversations, sans changer d'avis sur l'IDS. Ils se réservaient le droit de se retirer de tout accord stratégique à venir à moins qu'on ne trouve une solution acceptable au problème de l'IDS. Ils plaçaient, ainsi, les États-Unis dans la position de ceux qui semblent vouloir abandonner un accord START négocié plutôt que d'accepter un compromis sur l'IDS: les Soviétiques ne faisaient que mettre plus de pression sur les Américains.

LA REDÉFINITION DE L'IDS

Après la popularité initiale de l'IDS, il devient évident aux yeux de la plupart des observateurs qu'une défense des États-Unis sous la forme d'un astrodôme était impossible. (Même s'il était possible de construire un astrodôme anti-missile balistique, il serait sans effet contre les missiles de croisière.) Tandis que le président Reagan parlait encore en 1986 d'une IDS devant déboucher sur "un bouclier impénétrable pour des missiles... un bouclier qui pourrait nous protéger des missiles nucléaires tout comme un toit protège une famille de la pluie[9]", et que l'IDS était le poste le plus important du budget de la Défense (plus important que les budgets de recherche des trois armées, Terre, Air et Marine, réunis), des organisations comme la Federation of Concerned Scientists et la Commission d'évaluation de la technologie du Congrès continuèrent à publier des rapports de plus en plus critiques sur l'IDS. Dès 1984, l'effort au sein du programme de l'IDS était passé des technologies les plus futuristes aux technologies plus mûres telles que les armes à énergie cinétique utilisant des balles de métal qui détruisent les missiles ennemis

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(9) Tiré de "Strategic Defensive Arms Control: The ABM Treaty and Stars Wars", (1989).

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par collision à grande vitesse, la version moderne des boulets de canon, comme le note Fen Hampson(10).

Les problèmes de conception et les problèmes techniques liés à l'IDS devenant tous les deux plus visibles, la "Strategic Defense Initiative Organization" (SDIO), qui dirige le programme, fit preuve de plus souplesse dans l'adaptation du programme aux besoins de tous et chacun. En 1987, l'American Physical Society publia un rapport faisant autorité qui convenait, à l'instar des critiques, que les technologies telles que les armes à énergie dirigée ne pouvaient même pas faire l'objet d'évaluations convenables aux fins AM avant au moins dix autres années d'essais(11). Cette même année, les planificateurs de l'IDS modifiaient leurs objectifs de déploiement à long terme d'une défense multicouches et optaient pour un déploiement intérimaire, vers le milieu des années 1990, d'un système "phase 1" constitué de milliers de "projectiles intelligents" basés dans l'espace qui attaqueraient les missiles en les percutant. Les adversaires ont ridiculisé cette idée de 115 milliards de dollars en la considérant comme un plan destiné seulement à "avoir quelque chose là-haut" et à engager financièrement le gouvernement pour les années à venir, en l'obligeant à lever les restrictions sur les systèmes AM une fois pour toutes. Une redéfinition de l'IDS eut lieu quand ses partisans commencèrent à parler de modernisation (plutôt que de remplacement) de la dissuasion par l'introduction d'un facteur supplémentaire d'incertitude dans les plans d'attaque soviétiques et lancèrent l'idée que la recherche de l'IDS puisse déboucher sur des missiles anti-satellites efficaces(12).

En 1988, les planificateurs de l'IDS reconnurent que même le système de la phase 1 ne pourrait être achevé avant la fin de ce siècle, mais ils ajoutèrent que son prix ne serait plus que de 69 milliards de dollars, soit quelques 46 milliards de dollars de moins que les estimations

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(10) Hampson (1989), p. 238.

(11) American Physical Society Study Group, Science and Technology of Directed Energy Weapons, American Physical Society, Woodbury, New York, 1981.

(12) "Star Wars Gets Offensive Role: Satellite Killer", Le New York Times, 27 novembre 1988 et le Sénateur Tom Harkin, "Star Wars: A Trojan Horse for ASAT Weapons", dans Arms Control Today, mars 1989.

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fournies quelques mois auparavant. En juin de la même année, la Commission d'évaluation de la technologie du Congrès publia un autre rapport cinglant sur l'IDS, en plein accord avec l'American Physical Society, montrant que les technologies futuristes ne pourraient être efficaces avant une décennie au moins. Le rapport avertissait également que même un déploiement de la phase 1 "nécessiterait un acte de foi" dans l'efficacité des phases ultérieures et, que "la capacité de l'Initiative de défense stratégique (IDS) de rester en avance par.rapport à une menace en perpétuelle évolution était discutable(13)". Rouvrant le débat d'il y a 20 ans sur les systèmes AM, le Sénateur Sam Nunn proposa que l'IDS se concentre sur le développement d'un système de protection contre les lancements accidentels (ALPS). Dans un geste qui a mis en lumière la décourageante orientation de l'IDS en matière de relations publiques, les "projectiles intelligents" devinrent un système plus petit et plus intelligent, "galets brillants". (Un Sénateur démocrate se plaignait de "la recherche en apparence sans fin de possibilités de déploiement à court terme, projectiles d'argent ou galets brillants ou poussière de génie, selon la mode du moment parmi les concepteurs de l'IDS(14)".)

Avec le départ du président Reagan, l'IDS a perdu son plus grand partisan. Toutefois, même l'administration Reagan n'a pas maintenu son engagement envers le concept original de l'IDS. Cependant, Frank Carlucci, successeur de Weinberger au poste de secrétaire d'État à la Défense, a admis que la guerre des étoiles ne fournirait pas le "bouclier impénétrable" envisagé par le Président. Tandis que le soutien politique de l'IDS pâlissait, il en était de même de son financement. Bien que le Congrès ait toujours réduit les projets de budget de l'administration, en 1990, pour la première fois, l'IDS a reçu un budget inférieur à celui de l'année précédente (voir figure 2).

Avec l'arrivée de l'administration Bush, les perspectives de l'IDS semblent encore plus faibles. Brent Scrowfort, un adversaire connu

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(13) Tiré de Arms Control and National Security (1989), p. 80.

(14) Gary Chapman, "Smart Rocks, Brillant Pebbles, Genius Dust"? The Bulletin of the Atomic Scientists, novembre 1989.

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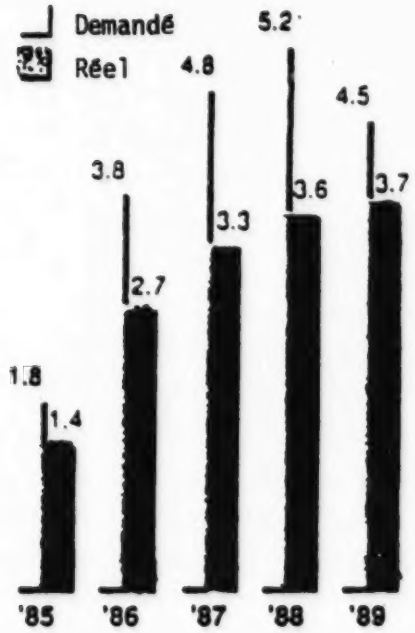
FIGURE 2

Budget de la Guerre des Étoiles

En milliers de dollars par année financière. Les chiffres ne tiennent pas compte du budget du ministère de l'Énergie.



Le budget 1990 est de 3,5 milliards de dollars

Source: Ministère de la Défense, Le New York Times, 27 janvier 1989.

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de l'IDS, est devenu le conseiller pour les affaires de sécurité nationale du président Bush, et selon John Tower, le premier choix du président comme secrétaire d'État à la Défense, "l'administration Bush considérait qu'il n'était pas possible de concevoir un parapluie qui puisse protéger toute la population américaine de l'incinération nucléaire(15)". Dans sa Directive n° 14 sur la sécurité nationale, concernant la modernisation des ICBM et l'Initiative de défense stratégique, signée le 14 juin 1989, le président Bush demande qu'on élabore des options visant à renforcer la dissuasion et la stabilité grâce au déploiement de défenses stratégiques basées sur les nouvelles technologies". L'ironie vient du fait qu'on identifie le rôle de l'IDS à un renforcement de la dissuasion, l'IDS devenant ainsi, tout au plus, l'un des nombreux programmes américains dans ce domaine plutôt que d'être une réponse unique à la menace des armements nucléaires. Comme l'ont indiqué cinq membres de la Sous-commission du Sénat sur l'affectation des crédits dans une lettre au sénateur Sam Nunn

> Le rejet explicite et trop longtemps attendu de l'administration du but initial de l'IDS, qui était de créer un astrodôme pour remplacer la dissuasion, doit entraîner une modification de la perception qu'on a du programme. L'IDS n'est maintenant ni plus ni moins qu'un autre moyen de réaliser la dissuasion... Nous ne pensons pas que le Congrès doive consentir à une augmentation du budget de l'IDS tant qu'il n'aura pas déterminé quelle lacune l'IDS doit combler dans la dissuasion stratégique à venir(16)."

CONCLUSION

Tandis que les partisans de l'IDS accusent ses adversaires d'oublier qu'il s'agit d'un programme de recherche plutôt que d'un système d'armes, et que l'on ne peut critiquer quelque chose qui n'existe pas

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(15) "Tower Declares Star Wars Shield Can't Be Complete", Le New York Times, 27 janvier 1989.

(16) Bruce MacDonald, "Lost in Space: SDI Struggles Through its Sixth Year", Arms Control Today, septembre 1989.

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encore, en fait l'essence même du débat sur l'IDS a été résolu il y a 20 ans lors du débat sur les systèmes AM. Paul Nitze, conseiller principal du Président Reagan pour le contrôle des armements, a *défini les trois* exigences fondamentales d'un système de défense stratégique: il doit 1) être militairement efficace, 2) résister à une attaque soviétique et 3) "à la limite rentable", ce qui veut dire que les États-Unis doivent être capable de l'entretenir à un coût inférieur à celui que l'Union soviétique engagerait pour accroître ses forces ou déployer des contre-mesures pour en venir à bout(17). En réalité, l'IDS ne promettait rien de tout cela.

Comme l'a écrit, en 1987, le Dr Wolfgang Panofsky, physicien de renommée mondiale et qui fut longtemps le conseiller des présidents Eisenhower, Kennedy et Carter,

> Je pense que, depuis 1972, il y a eu des progrès qui ont changé l'image des choses. Les plus grands progrès ont eu lieu dans les domaines des ordinateurs, du traitement de données, de la technologie des senseurs, de l'apparition des lasers à électrons libres et la possibilité, à tout le moins, d'un laser à rayons X à pompage nucléaire... Cependant, la caractéristique essentielle de tous ces progrès est qu'aucun d'eux ne mérite le nom de "percée". Ils ont été évolutifs. J'ajouterais que toutes ces évolutions relèvent à la fois de la technologie offensive et de la technologie défensive... à mon avis, il n'est pas évident que cette évolution ait fait pencher la balance contre les armements nucléaires lancés par missiles balistiques. En 1972, le fondement du traité était la prise de conscience commune des deux parties que dans l'équilibre entre l'offensive et la défensive, en ce qui concerne les missiles balistiques, l'offensive était largement en tête dans tout ce qui touche les aspects économiques et techniques. Si je considère la situation de la technique, je ne vois rien qui me persuade...que l'équilibre est différent aujourd'hui(18).

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(17) "Strategic Defenses and the ABM Treaty", dans Arms Control and National Security (1989), p. 77.

(18) "A Physicist Evaluates SDI", Arms Control Today, juin 1987.

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Étant donné les changements permanents auxquels est soumis le programme de l'IDS, il est évident que les objectifs initiaux du programme n'ont jamais convaincu personne, sauf le président Reagan. Alors que l'IDS restera sans doute une pièce importante du budget de la défense des États-Unis dans un avenir proche (ne serait-ce qu'à cause de l'inertie bureaucratique), le programme en 1990 n'aura probablement que peu de ressemblance avec celui de 1983. En fin de compte, le défaut de l'IDS tenait au fait qu'elle tentait de proposer une solution technologique rapide au problème de la guerre à l'ère nucléaire. Toutefois, quiconque y a bien réfléchi réalise que le problème réside encore dans les êtres humains et non dans les armements qu'ils ont inventés.

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APPENDIX

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Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems

Signed at Moscow May 26, 1972
Ratification advised by U.S. Senate August 3, 1972
Ratified by U.S. President September 30, 1972
Proclaimed by U.S. President October 3, 1972
Instruments of ratification exchanged October 3, 1972
Entered into force October 3, 1972

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Proceeding from the premise that nuclear war would have devastating consequences for all mankind,

Considering that effective measures to limit anti-ballistic missile systems would be a substantial factor in curbing the race in strategic offensive arms and would lead to a decrease in the risk of outbreak of war involving nuclear weapons,

Proceeding from the premise that the limitation of anti-ballistic missile systems, as well as certain agreed measures with respect to the limitation of strategic offensive arms, would contribute to the creation of more favorable conditions for further negotiations on limiting strategic arms,

Mindful of their obligations under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons,

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to take effective measures toward reductions in strategic arms, nuclear disarmament, and general and complete disarmament,

Desiring to contribute to the relaxation of international tension and the strengthening of trust between States,

Have agreed as follows:

Article I

1. Each party undertakes to limit anti-ballistic missile (ABM) systems and to adopt other measures in accordance with the provisions of this Treaty.

2. Each Party undertakes not to deploy ABM systems for a defense of the territory of its country and not to provide a base for such a defense, and not to deploy ABM systems for defense of an individual region except as provided for in Article III of this Treaty.

Article II

1. For the purpose of this Treaty an ABM system is a system to counter strategic ballistic missiles or their elements in flight trajectory, currently consisting of:

(a) ABM interceptor missiles, which are interceptor missiles constructed and deployed for an ABM role, or of a type tested in an ABM mode;

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(b) ABM launchers, which are launchers constructed and deployed for launching ABM interceptor missiles; and

(c) ABM radars, which are radars constructed and deployed for an ABM role, or of a type tested in an ABM mode.

2. The ABM system components listed in paragraph 1 of this Article include those which are:

(a) operational;
(b) under construction;
(c) undergoing testing;
(d) undergoing overhaul, repair or conversion; or
(e) mothballed.

Article III

Each Party undertakes not to deploy ABM systems or their components except that:

(a) within one ABM system deployment area having a radius of one hundred and fifty kilometers and centered on the Party's national capital, a Party may deploy: (1) no more than one hundred ABM launchers and no more than one hundred ABM interceptor missiles at launch sites, and (2) ABM radars within no more than six ABM radar complexes, the area of each complex being circular and having a diameter of no more than three kilometers; and

(b) within one ABM system deployment area having a radius of one hundred and fifty kilometers and containing ICBM silo launchers, a Party may deploy: (1) no more than one hundred ABM launchers and no more than one hundred ABM interceptor missiles at launch sites, (2) two large phased-array ABM radars comparable in potential to corresponding ABM radars operational or under construction on the date of signature of the Treaty in an ABM system deployment area containing ICBM silo launchers, and (3) no more than eighteen ABM radars each having a potential less than the potential of the smaller of the above-mentioned two large phased-array ABM radars.

Article IV

The limitations provided for in Article III shall not apply to ABM systems or their components used for development or testing, and located within current or additionally agreed test ranges. Each Party may have no more than a total of fifteen ABM launchers at test ranges.

Article V

1. Each Party undertakes not to develop, test, or deploy ABM systems or components which are sea-based, air-based, space-based, or mobile land-based.

2. Each Party undertakes not to develop, test, or deploy ABM launchers for launching more than one ABM interceptor missile at a time from each launcher, not to modify deployed launchers to provide them with such a capability, not to develop, test, or deploy automatic or semi-automatic or other similar systems for rapid reload of ABM launchers.

Article VI

To enhance assurance of the effectiveness of the limitations on ABM systems and their components provided by the Treaty, each Party undertakes:

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(a) not to give missiles, launchers, or radars, other than ABM interceptor missiles, ABM launchers, or ABM radars, capabilities to counter strategic ballistic missiles or their elements in flight trajectory, and not to test them in an ABM mode; and

(b) not to deploy in the future radars for early warning of strategic ballistic missile attack except at locations along the periphery of its national territory and oriented outward.

Article VII

Subject to the provisions of this Treaty, modernization and replacement of ABM systems or their components may be carried out.

Article VIII

ABM systems or their components in excess of the numbers or outside the areas specified in this Treaty, as well as ABM systems or their components prohibited by this Treaty, shall be destroyed or dismantled under agreed procedures within the shortest possible agreed period of time.

Article IX

To assure the viability and effectiveness of this Treaty, each Party undertakes not to transfer to other States, and not to deploy outside its national territory, ABM systems or their components limited by this Treaty.

Article X

Each Party undertakes not to assume any international obligations which would conflict with this Treaty.

Article XI

The Parties undertake to continue active negotiations for limitations on strategic offensive arms.

Article XII

1. For the purpose of providing assurance of compliance with the provisions of this Treaty, each Party shall use national technical means of verification at its disposal in a manner consistent with generally recognized principles of international law.

2. Each Party undertakes not to interfere with the national technical means of verification of the other Party operating in accordance with paragraph 1 of this Article.

3. Each Party undertakes not to use deliberate concealment measures which impede verification by national technical means of compliance with the provisions of this Treaty. This obligation shall not require changes in current construction, assembly, conversion, or overhaul practices.

Article XIII

1. To promote the objectives and implementation of the provisions of this Treaty, the Parties shall establish promptly a Standing Consultative Commission, within the framework of which they will:

(a) consider questions concerning compliance with the obligations assumed and related situations which may be considered ambiguous;

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(b) provide on a voluntary basis such information as either Party considers necessary to assure confidence in compliance with the obligations assumed;

(c) consider questions involving unintended interference with national technical means of verification;

(d) consider possible changes in the strategic situation which have a bearing on the provisions of this Treaty;

(e) agree upon procedures and dates for destruction or dismantling of ABM systems or their components in cases provided for by the provisions of this Treaty;

(f) consider, as appropriate, possible proposals for further increasing the viability of this Treaty, including proposals for amendments in accordance with the provisions of this Treaty;

(g) consider, as appropriate, proposals for further measures aimed at limiting strategic arms.

2. The Parties through consultation shall establish, and may amend as appropriate, Regulations for the Standing Consultative Commission governing procedures, composition and other relevant matters.

Article XIV

1. Each Party may propose amendments to this Treaty. Agreed amendments shall enter into force in accordance with the procedures governing the entry into force of this Treaty.

2. Five years after entry into force of this Treaty, and at five-year intervals thereafter, the Parties shall together conduct a review of this Treaty.

Article XV

1. This Treaty shall be of unlimited duration.

2. Each Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests. It shall give notice of its decision to the other Party six months prior to withdrawal from the Treaty. Such notice shall include a statement of the extraordinary events the notifying Party regards as having jeopardized its supreme interests.

Article XVI

1. This Treaty shall be subject to ratification in accordance with the constitutional procedures of each Party. The Treaty shall enter into force on the day of the exchange of instruments of ratification.

2. This Treaty shall be registered pursuant to Article 102 of the Charter of the United Nations.

DONE at Moscow on May 26, 1972, in two copies, each in the English and Russian languages, both texts being equally authentic.

FOR THE UNITED STATES OF AMERICA

RICHARD NIXON

President of the United States of America

FOR THE UNION OF SOVIET SOCIALIST REPUBLICS

L. I. BREZHNEV

General Secretary of the Central Committee of the CPSU

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APPENDIX B

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Protocol to the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems

Signed at Moscow July 3, 1974
Ratification advised by U.S. Senate November 10, 1975
Ratified by U.S. President March 19, 1976
Instruments of ratification exchanged May 24, 1976
Proclaimed by U.S. President July 8, 1976
Entered into force May 24, 1976

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Proceeding from the Basic Principles of Relations between the United States of America and the Union of Soviet Socialist Republics signed on May 29, 1972,

Desiring to further the objectives of the Treaty between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems signed on May 26, 1972, hereinafter referred to as the Treaty,

Reaffirming their conviction that the adoption of further measures for the limitation of strategic arms would contribute to strengthening international peace and security,

Proceeding from the premise that further limitation of anti-ballistic missile systems will create more favorable conditions for the completion of work on a permanent agreement on more complete measures for the limitation of strategic offensive arms,

Have agreed as follows:

Article I

1. Each Party shall be limited at any one time to a single area out of the two provided in Article III of the Treaty for deployment of anti-ballistic missile (ABM) systems or their components and accordingly shall not exercise its right to deploy an ABM system or its components in the second of the two ABM system deployment areas permitted by Article III of the Treaty, except as an exchange of one permitted area for the other in accordance with Article II of this Protocol.

2. Accordingly, except as permitted by Article II of this Protocol: the United States of America shall not deploy an ABM system or its components in the area centered on its capital, as permitted by Article III(a) of the Treaty, and the Soviet Union shall not deploy an ABM system or its components in the deployment area of intercontinental ballistic missile (ICBM) silo launchers as permitted by Article III(b) of the Treaty.

Article II

1. Each Party shall have the right to dismantle or destroy its ABM system and the components thereof in the area where they are presently deployed and to deploy an ABM system or its components in the alternative area permitted by Article III of the Treaty, provided that prior to initiation of construction, notification is given in accord

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with the procedure agreed to in the Standing Consultative Commission, during the year beginning October 3, 1977 and ending October 2, 1978, or during any year which commences at five year intervals thereafter, those being the years for periodic review of the Treaty, as provided in Article XIV of the Treaty. This right may be exercised only once.

2. Accordingly, in the event of such notice, the United States would have the right to dismantle or destroy the ABM system and its components in the deployment area of ICBM silo launchers and to deploy an ABM system or its components in an area centered on its capital, as permitted by Article III(a) of the Treaty, and the Soviet Union would have the right to dismantle or destroy the ABM system and its components in the area centered on its capital and to deploy an ABM system or its components in an area containing ICBM silo launchers, as permitted by Article III(b) of the Treaty.

3. Dismantling or destruction and deployment of ABM systems or their components and the notification thereof shall be carried out in accordance with Article VIII of the ABM Treaty and procedures agreed to in the Standing Consultative Commission.

Article III

The rights and obligations established by the Treaty remain in force and shall be complied with by the Parties except to the extent modified by this Protocol. In particular, the deployment of an ABM system or its components within the area selected shall remain limited by the levels and other requirements established by the Treaty.

Article IV

This Protocol shall be subject to ratification in accordance with the constitutional procedures of each Party. It shall enter into force on the day of the exchange of instruments of ratification and shall thereafter be considered an integral part of the Treaty.

DONE at Moscow on July 3, 1974, in duplicate, in the English and Russian languages, both texts being equally authentic.

For the United States of America:

RICHARD NIXON

President of the United States of America

For the Union of Soviet Socialist Republics:

L. I. BREZHNEV

General Secretary of the Central Committee of the CPSU